Claims

1. A filter element for removing contaminants from air, which filter element comprises a monolithic porous carbon structure.

2. A filter element as claimed in claim 1 in which the monoliths have a cell structure where the channel size is between 100micron and 2000microns and the wall thickness is between 100microns and 2000microns with an open area of between 30 and 60%.

3. A filter element as claimed in any one of claims 1 or 2 in which the monoliths have a surface area of at least $700m^2/g$.

4. A filter element as claimed in any one of claims 1 or 2 in which the monoliths have a surface area in excess of $1000m^2/g$.

5. A filter element as claimed in any one of claims 1 to 5 in which the monoliths have a length of 1 to 10 cm.

6. A filter element as claimed in any one of claims 1 to 5 in which the monoliths are produced by partially curing a phenolic resin to a solid, comminuting the partially cured resin, extruding the comminuted resin, sintering the extruded resin so as to produce a form-stable sintered product and carbonising the form-stable sintered product.

7. A filter structure which comprises a plurality of filter elements as claimed in any one of the preceding claims separated by a gap.

8. A filter structure as claimed in claim 8 in which each of the filter elements is from 1 to 3 cm in length separated by a gap of 0.5 to 1.5 cm.

9. Apparatus for the removal of contaminants from gases such as air which apparatus comprises a container containing a monolithic porous carbon filter element as claimed in any one of the preceding claims, an inlet and an outlet for the container whereby gases can pass via the inlet through the filter element and out through the outlet.